

May 6, 2003

TO: Internal File

FROM: Peter Hess, Environmental Scientist III/Engineering, Team Lead

RE: Methane Degas, Canyon Fuel Company, LLC., Dugout Canyon, C/007/039-03B

**SUMMARY:**

The permittee submitted a proposal to the Division on March 7, 2003 to drill two methane degasification boreholes for the purpose of enhancing the coal extraction process from the fourth longwall panel to be mined from the Rock Canyon seam in Sections 15 and 16. Section 15 involves State coal ownership under lease ML-42648. Section 16 is fee coal, owned by Canyon Fuel Company, LLC. All surface ownership for Sections 15 and 16 are owned by Canyon Fuel Company, LLC.

**TECHNICAL ANALYSIS:**

## **OPERATION PLAN**

### **MINING OPERATIONS AND FACILITIES**

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

**Analysis:**

The purpose of the two degasification boreholes is to improve the dilution/venting capabilities of the in-mine ventilation system such that dangerous levels of combustible gases will not accumulate in the gob and bleeder areas. According to Figure 5-6 (page 5-20), the degasification wells will be drilled to depths such that the total hole depths will be twenty-five feet above the roof line of the coal seam. **Chapter 6, Geology**, page 6-2, section **625**, also states “it is not anticipated that any additional geologic data will need to be collected at the well sites”.

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Section **624.300** also states “no test boring(s) or drill cores are planned at the site”. Therefore, none of the coal seam will be extracted for analysis. The wells will be permitted as a mining related activity under the R645 coal rules.

Holes MW-06 and MW-08 will not be plugged post drilling, as their intent is to bleed off the combustible gases within the mine, improving safety conditions and mining productivity. The anticipated life/usage of the degasification hole(s) is to be two to three years after the mining of the panel has been completed.

**Findings:**

Amendment C/007/039-03B qualifies as an amendment to the mining and reclamation plan.

**TOPSOIL AND SUBSOIL**

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

**Analysis:**

**Topsoil Removal and Storage**

Page 2-7 of Chapter 2, SOILS, section 234.200, Protection of Contaminants and Compaction indicates “the stockpile will be isolated from the main surface area by a berm and/or silt fence”. The permittee submitted additional information on May 1, 2003, which includes a design for the containment berms that will protect the resource as well as minimize the amount of suspended solids reporting to the sediment controls on the perimeter of the disturbance. The designs have been added as pages 40, 41, and 42 of Attachment 7-1. Same will provide treatment of the precipitation intercepted on the topsoil piles of MW-06 and MW-08 by providing for total containment of the 10 year 24 hour design event. Mr. Dave Spillman has provided a P. E. certification for all information submitted within Attachment 7-1.

**Findings:**

The submittal meets the minimum regulatory requirements.

**ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES**

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

**Analysis:**

## Road Classification System

Chapter 5, Engineering, page 5-7, section 527.100, Road Classification discusses the existing access roads to the proposed sites for MW-06 and MW-08. "MW-06 and MW-08 will be developed on or next to existing private roads as shown on Figure 1-1. The existing roads will be classified as primary roads and will be maintained as required by (the) landowner." As shown on Plate 1-1, Surface Ownership of the approved mining and reclamation plan, Canyon Fuel Company is the owner of the surface in Sections 2,3,4,5,8,9,10,11,12,14,15,16,17, and E1/2NW1/4, and W1/2NE1/4. Page 1-1 of the Chapter 1, Legal and Financial Information, TABLE 1-1, indicates that MW-06 is located in Township 13 South, Range 12 East, Section 16; MW-08 is located in T13S, R12E, Section 15. As noted above, all surface areas of both Sections 15 and 16 are owned by the permittee.

The permittee has classified the access roads in the area as primary. The roads are in place at the present time and **will not be reclaimed after the useful life of the wells has been completed.** Figure 1-1, page 1-7 depicts the roads which will provide access to the two degasification wells. Based on that drawing, it appears that the permittee will need to upgrade approximately 1,200 feet of road to access MW-06 and 1,800 feet of road to access MW-08. As indicated on page 5-7 of Chapter 5, Engineering, section 529, Management of Mine Openings, the well pad of MW-06 will be built on the existing road. Access will be barred on the road, as two gates will be installed as part of the disturbed area perimeter fence (See Figure 5-3, Operational Layout, page 5-17). Well MW-08 (See Figure 5-4, Operational Layout, page 5-18) will be northeast of an existing road. No access will be barred by the MW-08 well site. As the access roads in this area are the property of CFC, they have the right to bar access on them.

### Findings:

The access roads to the well sites are pre-existing and the property of Canyon Fuel Company. These primary roads will be retained as part of the approved post mining land use and are classed as primary by the permittee's application. Any upgrades made to the roads will be allowed to remain, as to reclaim the upgrades would be ludicrous. The minimum regulatory requirements of R645-202-232 have been met.

## HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

### Analysis:

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## **General**

The degasification wells will not be used as dewatering wells.

The permittee submitted revised information on May 1, 2003 to address an initial concern of where and how the water to drill the degasification wells would be obtained. Page 7-7 of Chapter 7, Section 731.800, Water Rights and Replacement, indicates, "Water used at the well sites will be purchased from Price River Water Improvement district and hauled to the sites."

## **Groundwater Monitoring**

The boreholes (wells) are degasification wells associated with the dilution and venting of combustible gases from the underground workings. The wells are not relevant to a ground water monitoring regime.

## **Surface Water Monitoring**

Based on the review of Figure 5-8, the disturbance created by the methane degasification hole MW-06 will come to within thirty-five feet of a contributory channel of Fish Creek. The channel is classed as ephemeral, and has been dry for several years. A review of Plate 7-1 in the approved mining and reclamation plan shows seven monitoring stations along the channel adjacent to MW-06. Only SC-14 is monitored during the mining phase. Operational monitoring point SC-14 lies approximately 2300 feet down gradient of MW-06. It was last sampled on 10/11/2002. A stream buffer zone will be established in this area.

## **Acid- and Toxic-Forming Materials and Underground Development Waste**

Page 6-2, Chapter 6, **GEOLOGY**, section **623, Geologic Determinations** references Chapter 2, Appendix 2-4 of the approved mining and reclamation plan. A statement that "no acid or toxic forming materials will originate at the well sites" is included as part of page 6-2. Appendix 2-4 contains laboratory analysis data for various soil samples. A review of that referenced information by a qualified soil scientist within the Division is necessary to determine whether the permittee's statement is accurate must be performed.

## **Water-Quality Standards And Effluent Limitations**

There should not be any discharges from the mud pits during the drilling phase of the degasification wells. If a discharge does occur, a compliance action may be necessary. The discharge would be caused by a failure of the permittee to comply with the approved plan.

Discharges off the disturbed area (which were not reclaimed post-drilling) which remain during the venting phase of the degasification well operations will treat intercepted precipitation

by reporting the sheet flow (via-2% reshaping of the area) to a silt fence (MW-08) or a collection ditch/silt fence combination, (MW-06).

The areas of MW-06 and MW-08 that have been reclaimed will provide treatment of the intercepted precipitation by utilizing surface roughening. As noted on page 5-12, Chapter 5, section 553.100, **Erosion and Water Pollution**, “temporary sediment controls will consist of silt fences and/or straw bales during and following regrading. As vegetation becomes established on the reclaimed surface, erosion potential will be further minimized.”

Upon completion of the venting phase (2-3 years after panel extraction has been completed, (See page 5-6, Chapter 5, section **526.200, Utility Installation and Support Facilities**), the remaining disturbance associated with the degasification wells will be returned to a condition which parallels the pre-mining use and coincides with the post mining land use, i.e., wildlife habitat and livestock grazing. The area will be reshaped to approximate original contour (See page 5-12, section **553.100, Disturbed Area Backfilling and Grading**), roughened to enhance moisture retention, and re-vegetated using the seed mix shown on page 3-8, Chapter 3, Table 3-2, Reclamation Seed Mix.

Temporary sediment control will be established about the final reclamation by establishing silt fences and/or straw bales where needed.

The disturbed area perimeter fence will remain in place until the Division is satisfied that all reclamation criteria have been met.

### **Diversions: General**

The diversion of any overland flows around the degasification well sites will be accomplished by installing silt fence on the uphill side of the cut bank.

### **Sediment Control Measures**

Plate 5-1, as submitted, shows a longitudinal cross section B-B' as well as a lateral cross section A-A'. Section A-A' shows that a cut/fill combination will be made to establish the pad area. The borehole location will be the demarcation of the toe of the cut versus the head of the fill. As the fill area is immediately adjacent to the Fish Creek drainage, the permittee must install silt fence for the entire length of the toe of the fill. Page 7-8, section 732, Sediment Control Measures, commits to minimizing additional contributions of sediment to stream flow by stating that “the structures to be used for runoff control at the well sites are a ditch, silt fences, and/or straw bale dikes”.

Chapter 7, section 731.100 Hydrologic Balance Protection / Surface Water Protection, discusses methods to protect the hydrologic balance. “... construction, maintenance, and reclamation operations will be conducted to handle earth materials and runoff in a manner that

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prevents, to the extent possible, additional contributions of suspended solids to stream flow outside the permit area, and otherwise prevent water pollution.” The 120 foot by 240 foot “pad” area depicted on FIGURE 5-1, (page 5-15), shows that an incisement will be constructed on a 2% grade on all of the inslopes to direct any intercepted precipitation toward the mud pit during the drilling phase of the well.

Similar in construction technique to MW-06, MW-08 will have a pad dimension(s) of 160 feet in width by 340 feet in length. MW-08 is approximately 2200 feet from the Fish Creek drainage. The outslope of the fill which will be created by the construction will be established at approximately a 1H:1V slope. The pad area will be sloped at a negative 2% gradient to report any intercepted precipitation into the mud pit during the drilling process.

Both of the mud pits (MW-06 and MW-08) will be incised in the area of the pad where earth cuts have taken place. No impoundment will be constructed where fill has been placed. The plan view of MW-06 (Figure 5-1, page 5-15) depicts a mud pit 55 feet by 55 feet. The depth necessary for the construction of the mud pit to contain the 10-year 24-hour event can be determined from the information provided in Attachment 7-1.

Similarly, MW-08 will have a square configuration, with a sixty-two feet lateral length. A depth for the “to be constructed” mud pit can be determined from the 10 year 24 hour design event calculations from Attachment 7-1.

The incised mud pits associated with the degasification wells are designed to meet the 10 year 24 hour event, and are P.E. certified by the permittee’s engineering manager.

The usable life of the mud pits will be short (probably less than a month). As such quarterly and annual inspections of same will not be conducted. The mud pits will not utilize spillways to discharge effluent off the disturbed area. As noted previously within this document, the pits are designed to retain the drilling mud and cuttings, as well as the sediment and runoff received from a 10 year 24 hour event. Thus, total containment is the treatment method utilized for the collected materials. The permittee has committed to pumping down the pits as needed to ensure that an adequate amount of storage volume for drillings effluent and sediment/collected runoff is maintained. This should be enhanced by the installation of a sediment marker, ( i.e., on site personnel will have a definitive indicator that will report when the mud pits need pumping to ensure retention of an adequate storage volume to treat the design event).

The impoundments associated with MW-06 and MW-08 are short lived, as they will contain the drilling mud and cuttings from the drilling process as well as provide the sediment containment and runoff treatment for the 10 year 24 hour design storm. The impoundments will probably not be in place for more than one month. The permittee has committed to maintaining the necessary sediment and water storage volume necessary to treat the 10 year 24 hour design storm by keeping the drilling mud level pumped at regular intervals.

The impoundments do not contain a discharge structure; treatment is provided by total containment.

The discharge structures associated with MW-06 and MW-08 consist of either a silt fence or a collection ditch/silt fence combination for treatment of and reporting of flows off the permitted area. The permittee is aware that diversions and silt fences must be maintained until Division authorization is granted to remove them.

### **Siltation Structures: General**

As discussed previously, the mud pits for degasification wells MW-06 and MW-08 are designed and P.E. certified by Mr. Dave Spillman, Utah registered professional engineer. The pits are capable of containing the drilling mud/cuttings and the runoff intercepted from a 10 year 24 hour design storm.

The mud pits do not meet the criterion established to be classified as an MSHA pond.

The mud pits will be incised and will more than likely be witnessed during the construction process by the permittee's qualified individual. The life span of the pits will be congruent with the length of time necessary to drill the wells, (probably less than one month). Therefore, quarterly and annual certifications will not occur.

The mud pits will be incised in areas where the earth has not been broken, (i.e., not located in a fill area). The drilling locations are in remote areas where the likelihood of a catastrophic overtopping of a pond causing a public safety hazard or serious environmental damage is nil. The permittee has committed to pump water from the mud pits periodically to ensure that room is available to contain the storm event, (See page 7-8, section 732.200, Sedimentation Pond). Also, the approved mining and reclamation plan contains a commitment to address the requirements of R645-301-515.200. As the mud pits are incised, the only hazard that might exist would be that of the pond overtopping. The commitment to pump the ponds periodically appears adequate, but raises a concern. **A drilling mud/sediment maximum level indicator should be installed such that site personnel can visually monitor the level of the drilling mud in the pits, so that an adequate volume of storage is retained for the 10 year 24 hour event.** As the mud pits serve a dual purpose, (drilling mud/cuttings retention and sediment control) a more accurate method of ensuring that adequate sediment storage and treatment volume is ensured is necessary.

### **Siltation Structures: Sedimentation Ponds**

There is no permanent siltation structures (sedimentation ponds) associated with degasification wells MW-06 and MW-08 (See page 7-9, Section 733.200< Chapter 7). As noted above, the pad areas for each well will be constructed such that inslopes are created on a negative 2% gradient in order to direct intercepted precipitation to the associated mud pits. The mud pits

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have been designed to contain drilling mud/cuttings as well as runoff from the 10 year 24 hour event, (See page 7-8, section 732.200, Sedimentation Pond). Storage calculations for the two mud pits are shown in Attachment 7-1. The calculations are P.E. certified by David G. Spillman, Manager of Engineering Services for the CFC Dugout operation.

As wells MW-06 and MW-08 are prepared for the venting phase, the two mud pits will be reclaimed, along with as much of the pad area as possible. The reclaimed areas will be stabilized by roughening of the area. Additional erosion control will be provided by applying mulch. As depicted on FIGURE 5-3, approximately 75% of the acreage associated with the degas well will be reclaimed. The existing road will be left intact, but gated at both ends of the gas well disturbance. The un-reclaimed area surrounding the well head will be sloped at a 2% down gradient to report any intercepted runoff to a diversion ditch located on the NE side of the disturbance. The P.E. certified design for the ditch is included in Attachment 7-1, page 8, **Drainage Ditch for MW-08**. Page 19 of Attachment 7-1 depicts a cross-section of the designed ditch, and shows a top width of 1.29 feet with a flow depth of 0.32 feet and 0.3 feet of freeboard. The flow collected by this ditch will be reported to a silt fence on the north end of the remaining disturbed area that will treat the disturbed area runoff at 2.5 GPM/square foot of fabric.

The permittee is obliged to maintain all sediment control structures until sufficient vegetation has been re-established on the well sites. This will be determined by a vegetation cover analysis that indicates that the new vegetation equals or exceeds that which exists in the undisturbed area.

### **Discharge Structures**

There are no discharge spillways associated with either MW-06 or MW-08. The mud pits treat utilizing total containment, retention and evaporation.

### **Impoundments**

These regulations are not applicable; there are no permanent impoundments associated with the drilling of either of the degasification boreholes.

### **Findings:**

The minimum regulatory requirements have been met.

## **RECLAMATION PLAN**



## GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

### Analysis:

Upon completion of the drilling activities, all machinery will be removed and the mud pits backfilled and compacted. Approximately 75% of each disturbance will be reclaimed by returning it to approximate original contour, roughening, and reseeding the area. An exhaust blower will be set up to create a low pressure area across the well head, allowing the combustible mine gases to vent to the atmosphere. This will remain at the site for the length of the life of the well (2-3 years after completion of the long wall panel extraction).

Upon completion of the venting phase, the blower and well head will be removed and the well casing will be plugged. Final reclamation activities will commence, returning the remaining disturbed area to AOC. Revegetation activities will commence; the only remaining equipment will be the disturbed area perimeter fence, which will remain until authorization is granted by the Division to remove same.

### Findings:

The minimum regulatory requirements have been addressed.

## APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

### Analysis:

This regulatory requirement has been previously discussed within this document. Upon completion of the drilling phase of MW-06 and MW-08, approximately 75% of the disturbance(s) will be reclaimed by regrading that portion to approximate original contour, roughening the area to enhance moisture retention and re-seeding the area with the seed mix approved by the Division. See page 5-9, Chapter 5, section **537.200, Regrading of Settled and Revegetated Fills**. As indicated, “upon completion of the well site, the areas not required for the exhaust blower will be regraded to approximate original contour”. After the venting phase of the degasification wells has been completed (2-5 years after extraction of the longwall panel has been completed), the remainder of the disturbance will be reclaimed, returning the remainder of

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the pad to approximate original contour, followed by roughening and reseeded of the area. The disturbed area perimeter fence and the associated permittee identification signs will remain in place until the Division has made a determination that all reclamation standards have been adequately addressed.

**Findings:**

The requirements of R645-301-202-241 have been adequately addressed.

**MINE OPENINGS**

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

**Analysis:**

Reclamation of the degasification wells is addressed in Chapter 5; section 540 RECLAMATION PLAN, section 550, RECLAMATION DESIGN CRITERIA AND PLANS, and section 560, PERFORMANCE STANDARDS.

Section **541.100, Commitment** indicates, "Upon permanent cessation of methane venting, Dugout Canyon Mine will seal the wells and permanently reclaim all affected areas in accordance with the R645 regulations and this reclamation plan."

The sealing of wells involves meeting the minimum regulatory requirements associated with R645-301-765. Page 7-12, **Chapter 7, HYDROLOGY**, section **748, Casing and Sealing Wells**, refers one to **Chapter 5, ENGINEERING**, Section 542.700, which states, "the casings will be plugged at the bottom to hold concrete. A lean concrete mixture will be poured into the casing until the concrete is within five (5) feet of the surface. At that time, the casing will be cut off at ground level and the rest of the casing will be filled with lean concrete. The concrete will be allowed to harden before the final reclamation is completed."

Methane degasification wells are unique in that they are drilled to a depth that is approximately twenty-five feet above the coal seam that is being extracted. As the longwall face retreats and extracts the coal from the area beneath the borehole, the roof caves as the longwall shields are advanced in order to protect the machinery. Hopefully, the roof caves up to the bottom of the degasification well, completing the circuit, and allowing atmosphere containing mine gases to be vented to the surface. An exhaust blower will sit on the surface creating a low pressure across the well head, pulling the mine gases from the underground gob area.

More than 90% of the subsidence will occur within the first year after completion of the extraction process. The casing of the degasification well may be subjected to crushing or

shearing anywhere along its length. Thus, the venting of combustible gases from the gob areas of the mine may be short lived. The plugging of these casings may only be effective in preventing adverse environmental or health and safety effects to a certain extent. The prevention of cross contamination of aquifers may not be possible in consideration of the fact that the plugging of the hole may not be possible for its entire length.

### **Findings:**

The permittee has committed to plugging the degasification well casings to the extent possible to prevent adverse environmental damage or possible effects to health and safety. This commitment is the best that can be given at this point in time, as only the future will tell if the partial plugging of the wells will be adequate. The minimum regulatory requirements of the R645 rules relative to minor coal exploration have been addressed.

## **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

### **Analysis:**

#### **Hydrologic Reclamation Plan**

The sediment control for the drilling phase of the degasification wells has been addressed above, under 514.300.

The venting phase of the degasification well process will utilize surface roughening and vegetation as the primary means of sediment control in the area which will be returned to approximate original contour post drilling. The portion of the drill pad that will remain disturbed for MW-06 will be sloped at a negative 2% grade to the NE. A drainage ditch located parallel with the NE disturbed area perimeter will collect the sheet flow and report it to a silt fence on the NE corner of the remaining drill pad. Pages 7-10 and 7-11 of Chapter 7, Hydrology, section 242.200, indicates that the silt fences are designed and certified by a registered professional engineer (See Attachment 7-1). Locations of the silt fences associated with MW-06 and MW-08 are shown on Figures 5-3 and 5-4. These sediment control methods will remain in place until the venting phase of the wells has been completed (approximately 2 to 3 years after the completion of mining in that particular panel; See page 5-6, section 526.200, Utility Installation and Support Facilities).

Upon completion of the methane-venting phase, the remainder of the disturbance will be reclaimed, returning it to approximate original contour. Any topsoil remaining in storage will be

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spread on the reshaped surface. The shaped and topsoiled area will then be roughened to enhance moisture retention. Revegetation of the areas will be initiated by reseeding with the seed mix described in Table 3-2, Reclamation Seed Mix, (See pages 3-8 and 3-9, Chapter 3, Biology). The disturbed area perimeter fences will be maintained until an approval to remove them is granted by the Division (See page 5-5, Chapter 5, engineering).

### Findings:

The minimum regulatory requirements have been met.

## REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

### Analysis:

#### Revegetation: Timing

The submittal received as AM03B makes the commitment to reclaim as much of the area being disturbed as possible upon completion of the drilling phase of degasification wells MW-06 and MW-08. A revegetation seed mix has been included as part of Chapter 3, page 3-8, **Table 3-2, Reclamation Seed Mix**. Roughening of the area will enhance moisture retention and promote new growth.

Submittal AM03B also contains verbiage relative to the completion of all required reclamation activities upon the completion of the venting phase for the wells. This will occur anywhere from two to three years after extraction of the longwall panel has been completed. All acreage associated with the degasification wells will be reshaped to approximate original contour, roughened and revegetated to control erosion and promote the use of the area in accordance with the approved post mining land use.

### Findings:

The minimum regulatory requirements have been adequately addressed.

## BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

### Analysis:

**General**

The permittee has submitted reclamation costs for well sites MW-06 and MW-08. An estimate of \$19,357 has been submitted to reclaim the 1.02 acres associated with MW-06. A bond amount of \$24,793 has been estimated for the reclamation of the 1.41 acres associated with MW-08. The reclamation cost figures have been reviewed by the Division and are determined to be adequate.

**Findings:**

The minimum regulatory requirements of R645-301-800, Et. Seq., have been met.

**RECOMMENDATIONS:**

The application should be approved.